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Progress Report
NAG5-7972

*Testing the Physical Mechanisms of Gamma-Ray Bursts with
Multi-Instrument Time-Resolved Spectroscopy*
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Enclosed is the renewal proposal for the fourth year of LTSA
NAG5-7972. Here, I summarize our recent progress.

We have continued the project of time-resolved spectral analyses of
gamma-ray bursts observed jointly by the BATSE and the Wide-Field
Camera on board BeppoSAX. We are making progress understanding the
systematic differences between the two data sets. These data comprise the
most important joint analysis set for our project.

In several meetings, we have reported on initial efforts to understand
the blackbody portion of the time series of spectra from GRB970111.
Clearly, a fading thermal component can provide a 'seed' spectrum for
Compton upscattering. It is very likely the X-ray excess that has been
observed previously in BATSE data alone continues into the X-ray band
observed by the WFC.

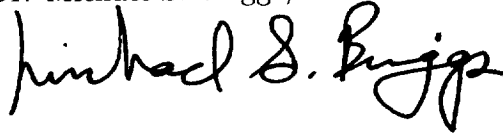
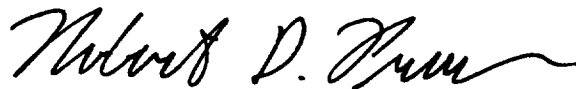
We have also made progress in joint fitting of BATSE Large Area
Detector and Spectroscopy Detector data with that of the Total Absorption
Scintillation Calorimeter (TASC) of the EGRET experiment on CGRO.
The TASC data are important to understanding the high-energy response

of the BATSE data. We have produced time-sequences of spectra for two important GRBs with data from both instruments.

The Summer Workshop on GRBs at the Aspen Center for Physics provided an opportunity for in-depth discussion of our on-going work.

To aid our effort, we continue to make improvements in our spectral analysis software, RMFIT (rewritten from WINGSPAN).

Dr. Michael S. Briggs, Ph.D.

A handwritten signature in black ink that reads "Michael S. Briggs". The script is fluid and cursive, with the first name being the most prominent.A handwritten signature in black ink that reads "Robert D. Krum". The script is fluid and cursive, with a long, sweeping tail on the final letter.